Department of Toxic Substances Control

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Arnold Schwarzenegger
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May 6, 2005

Commanding Officer
Department of the Navy
Naval Facilities Engineering Command
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Mr. Patrick Brooks
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DRAFT PROJECT WORKPLAN FOR THE TIME CRITICAL REMOVAL ACTION, IR02 NORTHWEST AND CENTRAL PARCEL E, HUNTERS POINT SHIPYARD, SAN FRANCISCO, CALIFORNIA, DATED MARCH 9, 2005

Dear Mr. Brooks:

Thank you for the opportunity to review the Draft Project Workplan for the Time Critical Removal Action at IR02. Removal Action Objectives for this activity are limited to radiological contaminants. IR02 is also contaminated with chemical contaminants including metals and PCBs. DTSC would prefer that the Removal Action Objectives include chemical contaminants and that contaminated soil not be placed back into the IR02 excavation. However, given that the Navy intends to limit RAOs and use contaminated soil as backfill, DTSC interest is that the activity be conducted in a way that is protective of public health and the environment, characterizes the nature and extent of remaining contamination, and allows the future re-excavation of contaminated backfill. Final remedial decisions for radiological and chemical contamination at IR02 will be evaluated in the Feasibility Study and ultimately made during through the Record of Decision. Please be advised that the final remedial action at IR02 may involve the re-excavation of contaminated soil used as backfill for the IR02 excavation and the Navy may incur additional costs of future remedial actions.

The comments of the DTSC are attached to this letter. Also attached to this letter are the comments of the State of California Department of Health Services.

If you have any questions regarding this letter, please contact me at 510-540-3776.

Sincerely,

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Hunters Point Parcel E IR02 Northwest and Central
Time Critical Removal Action (TCRA) Work Plan, Dated March 9, 2005
May 6, 2005

General Comments

1) Time Critical Removal Action
The Department of Toxic Substances Control questions the appropriateness of a Time Critical Removal Action at IR02. Because the planning period for the IR02 removal action exceeded 6 months and because of the complexity of the action (removal and treatment of a mixed hazardous waste and placement of contaminated soil back into the excavation), DTSC believes that the requirements specified in Code of Federal Regulations, Section 300.415(b)(4) and Section 300.415(n)(4) apply. These sections specify the need for the generation of an Engineering Evaluation and Cost Assessment (EE/CA) and to meet the corresponding public involvement requirements. The DTSC request that the BRAC Cleanup Team negotiate clear criteria and process for determining what type of Removal Action (Emergency, TCRA, and Non-TCRA) is appropriate for future interim actions at Hunters Point Shipyard.

2) Use of Contaminated Soil as Backfill Material
The Department of Toxic Substances Control disagrees with the Navy's intent to redeposit contaminated soil in the excavation at IR02. Antimony, Asbestos, Cadmium, Copper, DDD, Lead, Mercury, PCB, and Zinc in known to exist in soil at IR02 at levels that exceed the California Total Threshold Limit Concentrations (TTLC). TTLC is one of the defining criteria for hazardous waste in California. DTSC would prefer that the Navy propose Remedial Action Objectives for chemical contamination in addition to the radiological objectives already proposed in the Workplan and that contaminated soil not be used as backfill. Final remedial decisions for radiological and chemical contamination at IR02 will be through the completion of the CERCLA process and in the Record of Decision.

3) Title of Document
In order to clearly identify the action as a Time Critical Removal Action please change the title to include the phrase "Time Critical Removal Action".

4) Electronic Delivery
DTSC is now archiving documents electronically. Please submit a compact disc containing the draft Workplan and final Workplan for this removal action.

Specific Comments

1) Section 2.3, Chemical Characterization
The PRG values used in the table on page 2-4 and 2-5 are not consistent with the October 2004 Region 9 PRG. Please correct any inconsistencies. Also, please clarify if the industrial or residential PRGs are being used.

2) Section 2.3, Chemical Characterization
Please discuss exceedences of California's total threshold limit concentrations (TTLCs) hazardous waste criteria.

3) Section 2.3.2, Radiological Characterization
The text says that 42 test pits were dug in Phase II investigations; however, only 32 test pits are shown on Figure 2-1. Please clarify whether the missing test pits are located elsewhere on site. Revise text and/or figure accordingly.

4) Figure 2-1
Please include the locations of the 5 air permeability corings and 22 monitoring wells on Figure 2-1. Clarify whether corings and wells are located on IR02 Northwest or elsewhere on the site.

5) Section 3.1, Regulatory Process
The text states that the regulatory agencies have concurred on the Action Memorandum. DTSC has not provided that concurrence and as the Navy is conducting the Removal Action under Navy's authority, DTSC concurrence is not required.

6) Section 3.1, Regulatory Process
Please include a definition of a Time Critical Removal Action (TCRA) and its role and place in the CERCLA process (i.e. an interim action prior to a Feasibility Study and Record of Decision). Please include in the discussion whether the action meets the planning period requirements specified in CFR, Section 300.415(b)(4) and support your determination. Include a description of the authority the Navy is taking in conducting this removal action. Please include in the discussion the responsibilities of the regulatory agencies in a TCRA at Hunters Point Shipyard.

7) Section 3.2, Removal Action Objectives (RAOs).

The remediation of both radiological and chemical contamination at IR02 is conducted under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP). This activity is an interim action under CERCLA and not the appropriate place for making determinations of a 'final remedy'. Final cleanup criteria will be established during the Record of Decision (ROD) process. DTSC, other agencies (e.g., California Department of Health Services; Regional Water Quality Control Board, and US EPA), and the public participate in the process of determining final cleanup criteria. If final cleanup criteria are more stringent than removal action criteria, additional work may be required at a later date. Please delete the following statement: "Meeting the specified radiological remedial objectives for the area *will constitute the final remedy for radioactive contamination at the site*" (pages ES-2 and 3-1) and modify this section to be consistent with CERCLA and the NCP.

8) Section 3.2, Removal Action Objectives (RAOs).

RAOs are presented for only 3 radiological contaminants (i.e., radium-226, cesium-137, and strontium-90). However, other radiological contaminants are suspected at the site—for example, as constituents of sandblast grit from ships used in atomic explosions in the Pacific. Please expand Table 3-1 to include all possible radioactive contaminants.

9) Section 3.2, Removal Action Objectives (RAOs).
Highly elevated concentrations of chemical contaminants have been measured in the area. Examples of soil concentrations (from RI investigations) greater than total threshold limit concentrations (TTLCs) are provided below. Exceedences of TTLCs are provided because soil containing contaminants above any TTLC is a California hazardous waste (22 CCR § 66261 et seq.). However, TTLCs may not be the most stringent criteria to consider. Concentrations protective of human health and the environment may be significantly lower than TTLCs. Please explain why removal action criteria are proposed for only a limited group of radiological contaminants when other contaminants have been measured at very high elevations.

Examples of TTLC exceedences

a) Elevated concentrations of PCBs—up to 490 mg/kg (above the TTLC of 50 mg/kg)--have been measured. PCBs are widespread.
b) Very high concentrations of metals (especially copper, lead and zinc) were measured and are widespread--including the highest occurrences at Hunters Point for several metals. Concentrations greater than TTLCs were measured for (maximum concentration/TTLC, in mg/kg): antimony (1930/500), barium 16,200/10,000), cadmium (102/100), copper (198,000/2,500), lead (19,700/1,000), mercury (69.2/20), nickel (10,300/2,000), and zinc (25,000/500).

c) Other contaminants above TTLCs include asbestos (up to 95%, above the TTLC of /1%) and DDD (up to 1.1, above the TTLC of 1.0). RI results are limited for herbicides and pesticides: data gaps may exist.
d) RI results for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs: except for benzo(a)pyrene), herbicides, and pesticides were not reviewed for this memorandum, which focused on exceedences of TTLCs. Elevated concentrations of benzo(a)pyrene were measured up to 14 mg/kg (IR02TA19C), with elevated non-detects (NDs) of up to 18 (IR02B361). There is no TTLC for benzo(a)pyrene.
e) TPH exceedences are pertinent since PCBs (and other contaminants) may be mobilized in TPH. There are no TTLCs for TPH. TPH-g (gasoline range) has been measured at up to 6,400 mg/kg (IR02B250). TPH-d (diesel range) has been measured at up to 14,000 mg/kg (IR02B461). TPH-mo (motor oil range) was not analyzed for at IR02 Northwest and Central.

10) Section 3.4, Applicable or Relevant and Appropriate Requirements (ARARs)
Please include a table listing specific ARARs, with a brief description of each ARAR and specific activities for which the ARARs apply. A table constructed in a manner following formats used for Feasibility Studies (FSs) would help clarify the activities and requirements.

11) Section 3.4, Applicable or Relevant and Appropriate Requirements (ARARs)
Please determine whether soil handling operations and backfilling with contaminated soil constitute corrective-action management units (CAMUs) and should be included as an ARAR.

12) Section 3.4, Applicable or Relevant and Appropriate Requirements (ARARs)
Please determine whether staging pile requirements (40 CFR 264.554) should be included as an ARAR.

13) Section 3.4, Applicable or Relevant and Appropriate Requirements (ARARs)
Please determine whether testing requirements for remediation waste, including debris should be included as an ARAR.

14) Section 3.4, Applicable or Relevant and Appropriate Requirements (ARARs)
Please determine whether treatment standards for soils that are to be placed in the ground on site are subject to requirements under RCRA for disposal of hazardous on land.

15) Section 3.4, Applicable or Relevant and Appropriate Requirements (ARARs)
Asbestos is an industrial waste at Hunters Point and is a common component of serpentinite rock and fill. The California Air Resources Board (CARB) regulations on

asbestos apply to any construction activities in serpentinite or ultramafic rocks or soils, including the PCB removal action. Monitoring, sampling, and dust control activities are required. Personal monitoring (not ambient monitoring) is appropriate for worker safety. CARB regulations are found at: http://www.arb.ca.gov/toxics/atcm/asb2atcm.htm. Please include these regulations as an ARAR.

16) Section 5.3, Environmental Resources Surveying
Please discuss the confirmation of burrowing owl habitat.

17) Section 5.10, Existing Groundwater Monitoring Well Abandonment
In order to monitor effects on groundwater of the IR02 removal action, propose monitoring wells along the bay margin and along the industrial reuse margin. Please include documentation of well decommissioning in the removal action report.

18) Section 5.11, Soil Excavation and Removal of Additional Radioactive Material.
Excavation of the entire radiological footprint (minus sloping sidewalls) to 10 fbgs or to Bay Mud is proposed. In order to meet RAOs, consider extending the excavation below 10 fbgs if radiological contamination is confirmed at the lowest depths proposed.

19) Section 5.11, Soil Excavation and Removal of Additional Radioactive Material.
The text says (page 5-8) that absorbents will be used to collect free product in the excavation. Please clarify whether the excavation will be extended in order to remove free product.

20) Section 5.11.4, Soil Stockpiles.
Will TPH-contaminated soils and other visually contaminated soils be segregated? DTSC request that highly contaminated soils be identified (based on existing data) and segregated from other soils.

21) Section 5.12, Post-Excavation Sampling.
Post-excavation sampling is proposed for radiological compounds only. Please include post-excavation sampling for all site contaminants and develop a sampling plan that will ensure vertical and horizontal characterization of contamination.

22) Section 5.13, Stockpile Characterization
The Navy's intent is to place stockpiled soil back into the excavation. The Workplan states that "Stockpile characterization data will be used to support future remedial decision making". Please explain how the stockpile data will be used to support future remedial decision making.

23) Section 5.13, Stockpile Characterization
Since stockpile characterization data will be used to support future decisions, please analyze soil stockpiles for asbestos, organotin, herbicides, TPH-g, and TPH-mo in stockpile characterization. Also, please include soil leaching tests (e.g., TCLP) for all stockpile samples collected.

24) Section 5.14, Backfill.
Please clarify the criteria the Navy will use for determining if soil or debris is appropriate for use as backfill.

25) Section 5.14, Backfill.
Please clarify whether soils will be segregated during backfilling. For example, will disposal "cells" be created so that analytical results from stockpiles and import materials can be correlated with a location in the ground after disposal?

26) Section 5.14, Backfill.
Shallow backfill will consist of Bay Area Rapid Transport (BART) material which "based on previous sampling results, has been deemed suitable for use as backfill by the DON [Department of the Navy]" (page 5-13). Please address the following concerns.

a) Please clarify what "deemed suitable" means: include specific criteria.
b) Please include analytical results for BART (and other) materials. Results must be specific to the actual soil used for backfill.
c) Please specify frequency of sampling for all backfill materials. Frequency of sampling depends on source location, source history, and volume of backfill—and should be consistent with DTSC's recommendations at: http://www.dtsc.ca.gov/PolicyAndProcedures/Schools/SMP_FS_Cleanfill-Schools.pdf.
d) For all backfill, please include volumes and source locations. For ease of comparison with DTSC's recommendations for sampling frequency, please present information in a tabular format.

27) Figure 6-1.
Please include truck routes for radiologically contaminated soils and debris en route to/from Building 406 (page 5-5).

28) Section 8.4.2.2, Fugitive Dust
Please include a dust control plan, which covers all components of the proposed removal action and considers the following components.

a) Consider enclosed temporary structures for soil handling operations.
b) Include an air monitoring plan for asbestos, radiological contaminants, volatile organic compounds (VOCs), methane, and other constituents. Include field or

laboratory instrumentation, sampling frequency, analytes, and analytical methods. Include action levels. Indicate monitoring locations on a figure.

c) Please include specific requirements of the California Air Resources Board (CARB) with respect to air monitoring for asbestos and dust.
d) Describe and identify the location of the meteorological station (e.g., wind sock, et cetera).
e) Identify wind conditions under which responses are required (e.g., work stoppage).

29) Section 8.4.2.5, Worker Health and Safety
Please include an H&SP, with action levels for various site compounds and for various site activities.

30) Section 8.4.2.5, Worker Health and Safety
Please include an H&SP, with action levels for various site compounds and for various site activities.

31) Appendix A, Section 4.3, Stockpile Characterization Sampling (page A.4-3).
Please see comments on Section 5.13.

32) Appendix A, Section 4.5 Import Material Sampling (page A.4-5)
Please see comments on Section 5.14

33) Appendix A
Please include Air Monitoring in the Sampling and Analysis Plan

34) Appendix A, Section 5.1 Request for Analysis
Please include air samples within this section.

35) Appendix A, Section 6.4 Import Backfill Material Sampling Procedures (page A.6-5)
The text says: "...if the site is not accessible, then a sample of the material will be sent to the TtFW project site, and samples will be collected." With respect to sub-samples taken from a larger sample sent by the facility, it will be difficult to demonstrate that results are representative and that sampling frequency is appropriate. DTSC recommends collection of samples at the borrow area, while the borrow material is in-place, and analysis prior to removal from the borrow area.

36) Appendix A, Table A.5-1 and Elsewhere.
With respect to VOC analysis, specify the volume of the EnCore samplers and the preservatives to be used after extraction from the samplers.

37) Appendix A, Table A.8-1, Data Quality Objectives

Comments on DQOs are provided elsewhere in this memo and are not repeated here. Examples include request to include contaminants other than radiological contaminants, requests for additional analytes, et cetera.

38) Appendix A, Table A.8-1, Data Quality Objectives
The following sentence (Step 2: 4.) may need clarification or rewriting, since future criteria are unknown at the present: "Do samples of the stockpiled soil contain chemicals of concern at concentrations greater than remedial objectives identified in the future for this portion of Parcel E?" Please correct.

39) Appendix A, Table A.8-1, Data Quality Objectives
Footnote b. Specify the PRG used (e.g., industrial soil, direct contact exposure pathways, October 2004).

40) Appendix A, Table A.8-1, Data Quality Objectives
It is not possible to evaluate whether reporting limits (RLs) are appropriate since risk based levels for human-health protection and for ecological protection have not been determined for various exposure scenarios.

Department of Health Services (DHS) Review

Activity: Review of *Draft Project Work Plan, IR-02 Northwest and Central Parcel E, Hunters Point Shipyard, San Francisco, CA*, dated March 9, 2005
April 29, 2005

General Comments:

1. If the Navy intends to release this site for unrestricted use, they need to show that this removal action cleaned the site to as low as reasonably achievable (ALARA) and any residual contamination to average concentrations that when modeled would not exceed a dose of 25 millirem per year (mrem/year). The cleanup criteria (See Soil Remedial Objectives (RRO) on Table 3-2) will need to reflect these values.

   It is not apparent from previous submittals from Navy sites that a residual concentration of 1 picocurie per gram (pCi/g) radium-226 (Ra-226) would be equivalent to less than 25 mrem/year. There may also be a need to show how the unity rule or sum of fractions rule would be used, since there are multiple contaminants of concern. These issues should be resolved before remediated areas are backfilled and/or a final status survey commences, including confirmation surveying and sampling if warranted by DHS.

2. If the Navy plans to dispose of any materials in a California facility, they should contact the agency that has jurisdiction and can explain the moratorium that has been placed on these facilities regarding radiation. Clarification on this issue should be obtained from the State Water Resources Control Board, who has been given authority under this moratorium.

Specific Comments:

1. Page ES-1, second bullet: What conceptual model was used to explain why the gamma-emitting radioactive materials would generally be in the upper 1 foot of soil?

2. Page ES-1, fourth bullet: Please define and explain the significance of "Bay Mud" and "Bay Mud geologic unit." Also, is there a reason that the radiological devices would not exist below the "Bay Mud"?

3. Page ES-2, second paragraph: If the Navy is considering requesting an unrestricted release of this property, the removal action objectives will need to propose radionuclide concentrations that when modeled reflect ALARA and do not exceed 25 mrem/year. See General Comment 1 above.

4. Page ES-4, "Prior to backfilling..." : If the Navy is planning to request an unrestricted release for transfer of this property out of Federal ownership, then before backfilling the Navy needs to ensure that sampling, surveying and laboratory results of the soil remaining after excavation would meet the

requirements of a final status survey. The results from laboratory analysis and surveying would need to meet DHS' approval for unrestricted release.

5. Page 2-7, Section 2.3.2: Explain the depth of "Bay Mud" and how far below this depth were the instruments able to detect the radionuclides of concern.

6. Page 3-3, Section 3.5: Provide justification that 1 pCi/g of Ra-226 in soil would not exceed a dose of 25 mrem/year when modeled. See General Comment 1.

7. Page 4-4, Section 4.6: See General Comment 1regarding RROs and approval for unrestricted release of property.

8. Page 4-4, Sections 4.71 and 4.72: It is not apparent how the proposed investigation level of "3 sigma of the mean background area level" will be able to discern cesium-137 (Cs-137) values less than 0.13 pCi/g, strontium-90 (Sr-90), and Ra-226 values less than the Nuclear Regulatory Commission's (NRC) soil screening value of 0.6 pCi/g. Please show how investigation levels correlate to release criteria.

9. Page 4-6, Section 4.8: What are the minimum detection levels for discrete sources or concentrations of the radionuclides of concern with the instruments and methods used for scanning?

10. Page 4-14, Section 4.9.6: See General Comment 1 regarding proposed Ra-226 concentrations.

11. Page 4-17, Section 4.11.2: Scanning or stationary measurements of soil will not be adequate for DHS to conclude that soil could be released for unrestricted use. DHS will need to see soil analysis of samples collected using the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) or similar guidance showing that the residual contamination does not exceed 25 mrem/year after ALARA has been demonstrated.

12. Page 8-8, Section 8.6.2.2: DHS would like to visit the site to observe some of the work, soil sample compositing, and separation of contaminated soil. DHS may also need to collect confirmation samples and perform confirmation surveys before this area is backfilled.

13. Page 5-12, Section 5.12: See General Comment 1 and Specific Comments 11 and 12 regarding DHS data review, confirmation surveying and sampling before backfilling.

14. Page 8-8, Section 8.6.2.2: DHS requests that laboratory analysis data be provided for concurrence that the site meets the derived concentration guideline levels (DCGL) needed for unrestricted release. DHS may also request access to the site to perform a confirmation survey and sample collection before this site commences with backfilling and site restoration. See General Comment 1.

15. Table 3-1: DHS requires that sites requesting unrestricted release demonstrate that doses from residual contamination not exceed 25 mrem/year after ALARA has been demonstrated. The NRC screening value equivalent to 25 mrem/year is set at 0.6 pCi/g for Ra-226 in soil.

16. Appendix A, Table A.4-1: See General Comment 1 and Specific Comment 15 regarding the RROs and cleanup criteria/goals for the radionuclides of concern.

17. Attachment A, section 6.1: Please explain and/or justify how the sampling rate of 2 composite samples per 50-foot by 50-foot lift was determined and whether this would be adequate for releasing the soil for unrestricted use?

18. Attachment 1, HPO-Tt-009, Page 6 of 10, Section 6.2.2: There should be a mechanism or plan to address how samples will be collected to ensure that samples are adequate in number so that they are representative of the areas (e.g., lift, stockpile, remaining soil in excavation site after excavation, etc.) being sampled. The basis for representative sampling should be explained in the document.